

**Abstract**

5 Lactones are prepared by catalytic carbonylation of oxiranes using a catalyst system comprising

10 a) at least one carbonylation catalyst A comprising uncharged or anionic transition metal complexes of metals of groups 5 to 11 of the Periodic Table of the Elements and

b) at least one chiral Lewis acid B,

15 with the exception of  $[(\text{salph})\text{Al}(\text{THF})_2][\text{Co}(\text{CO})_4]$ , as catalyst.